INDEX TO 1990 ARTICLES

BY SUBJECT . . .

Abrasive cutting **4**:69-70
Abrasive wheels **4**:69-70
Aerospace **5**:18-21, **8**:35-39
Aircraft engines **4**:43-44
Aluminum
  GTAW of (D.S.) **7**:42
  size-weight (D.S.) **3**:50
Arc-welding cable (D.S.) **9**:54
Austenitic corrosion-resistant alloys:
  Trade names, compositions (D.S.) **10**:62
Auto parts **10**:49-50
Box girders **4**:39-41
Brass, size-weight (D.S.) **3**:50
Bridge fabrication **4**:39-41
Bridge-welding code **7**:23-25
Carbon equivalent of cast iron **3**:39-40
Carbon steels, SAW of **6**:49
  austenitic stainless steels **6**:49
  chromium-molybdenum steels **6**:49
  low-alloy steels **6**:49
Cast irons **3**:38-40
Centerline cracking **2**:37, 39
Ceramics **11**:34-35
Chevron cracks **2**:38-39
Cladding, laser-beam **10**:59-61
Clinical equipment **9**:27-30
CNC **4**:58-61
Codes, bridge-welding **7**:23-25
Composites **11**:34-35
Computer-integrated manufacturing **12**:28-29
Computerization **11**:57-59
Consumables **11**:54
Control cabinets **12**:28-29
Controls for thermal cutting **4**:58-62
Copper, GTAW of (D.S.) **7**:42
Cost control **11**:57-59
Cracking **2**:34-40, **3**:42-43
Crater cracks **2**:35
Defects **2**:34-40, **6**:61, **10**:32-38
Design for manufacture **9**:35-37
Discontinuities **10**:33
Duplex stainless steel **8**:30-33, **11**:41
Dust **6**:62
Earth-moving equipment **6**:20-22, **12**:19-22
Electrical shock **6**:62
Electric-arc spraying **5**:31-32
Electromagnetic fields **11**:43-44
Electron-beam welding, Framatome **12**:39-40
Electronics, joining for **10**:29-30
European Community **8**:48-52, **11**:26-29
Expert systems **11**:48
Fabricating **9**:27-30
Farm equipment **4**:47-48, **12**:23-27
Fatigue **7**:24-25
Ferrite formation, austenitic stainless steels **12**:33-38
  magnetism tests **12**:33-38
  measurement of **12**:33-38
Filler-metal classifications **11**:26-29
Flash-butt resistance welding **5**:18-21
Fluorides **6**:62
Flux-cored-arc welding **6**:20-22
Fluxes
  subarc **3**:43
  subarc for laser-beam cladding **10**:59-61
Forming **9**:22-24
Fume collectors **12**:43-45
Fumes and gases **6**:62, **8**:24-26, **11**:43
Gages, weld **10**:38
Gas-metal-arc welding **11**:67-68
  pulsed, heat input for **9**:51-53
  rotating arc **8**:45-47
Gas-tungsten-arc welding of nonferrous alloys (D.S.) **7**:42
  repair **4**:43-44
Golf carts **2**:26-32
Grinding **8**:41-43, **12**:43-45
Grinding wheels **8**:41-43
Guns, fume-exhaust **11**:54
Hardenability **2**:37-40
Hardfacing **5**:37
Head protection **6**:62
Heat-input calculations **9**:51-53
High-strength steel **11**:37-38, 41

AIRCO

INSIST ON

SQUAREWAVE AC

WITH AC WAVE BALANCE CONTROL FOR TIG WELDING ALUMINUM!

Improve bead profile, control penetration and cleaning action, reduce tungsten spitting and heating in AC tig welding applications. These advantages and more are offered in ESAB's 300 AC/DC SQUAREWAVE and 300 AC/DC HELIWELDER V tig welding machines featuring squarewave output with AC wave balance control.

World Leaders in Arc Welding

For more information, see your local Authorized Airco Distributor or contact:

ESAB

ESAB Welding Products • P.O. Box F-19
Florence, SC 29501 • Telephone (803) 684-5601
FAX 1-800-634-7548 • In Canada (416) 670-2762

Member of The Esab Group

Circle 95 on Reader Service Card

High-velocity oxyfuel spray **5**:31-32
Hot cracking **2**:34-37
Hot tearing **2**:36-37
Hot-gas welding **4**:73
Hot-plate welding **4**:73
Hydrogen cracking **2**:35-37, **11**:41
Implant welding **4**:75
Inspection of submerged-arc welds **6**:61
International Institute of Welding **11**:23-25, 29
International Machine Tool Show **12**:43-45
International standards **11**:23-25
Jet engines **4**:43-44
Job shops **4**:66-67
Joint design, box-tubing **7**:32-35
Just in time, Kanban **9**:27-30
Lamellar tearing **2**:38-40
Laser welding **12**:43-45
  cladding **10**:55-56, 59-61
  cutting **10**:49-50, 55-56, **11**:53-54
  welding **7**:37-40, **10**:55-56
Liquid penetrant testing (PT) **10**:34-38
Lift trucks **3**:25-29
Liquation cracking **2**:36-37
Local brittle zones **4**:64-65
Low-alloy steels **4**:64-65
Machine vision **11**:47-48
Magnesium, GTAW of (D.S.) **7**:42
Magnetic particle testing (MT) **10**:34-38
Management **8**:35-39
Mechanical-trace controls **4**:58
Mechanization **11**:57-59
Metal buildings **12**:30-31
Metallizing **5**:30-32, 37
Metallurgy **9**:42-44
Military **8**:35-39
Narrow-gap welding **8**:45-47
Nesting software **3**:26-29
Nondestructive testing **10**:32
Nonmetallic materials **11**:34-35
Offline programming **11**:47-48
Optical-trace controls **4**:58-61
Orbital welding **4**:53-55
Oxyfuel cutting **3**:25-33
Ozone **11**:44
Panel welding **4**:55
Percussion welding **10**:29-30
Pipe dimensions (D.S.) **2**:44
Plasma spraying **5**:32
Plasma-arc cutting **3**:25-29, 32-33
Plastics **11**:34-35
  joining **4**:72-75
Polymers **4**:72-75
Portable grinders **8**:41-43
Press brakes **9**:22-24
Pressure vessels **4**:53-55, **8**:32-33
Protective clothing **6**:62
Punching software **9**:29-30
Qualified workers **11**:57-59
Quality **11**:57-59
Radiography (RT), gamma ray **10**:34-38
Reheat cracking **2**:3
Resistance welding
  (D.S.) **8**:54
  robotic **12**:23-27
  robotic tool changer **12**:23-27
Restraint **2**:37-40
Robotic spot welding **12**:23-27
Robotic welding **2**:26-32, **4**:47-48, **5**:27-29, **6**:20-22, **9**:47-49, **12**:19-21
  code qualification of **11**:30-33
Rock crushers **3**:32-33
Rotating-arc GMAW **8**:45-47
Safety **8**:24-26, **11**:43-44
Seam tracking **5**:27-29
Servo controls **4**:59-60
Shielding gas **11**:67-68
Shipbuilding **8**:45-47
Shot peening **9**:38-40
Simultaneous engineering **9**:35-37
Sleeving, tube **7**:37-40
Software, fabricating **11**:48
Solidification cracking **2**:34-37
Space shuttle **5**:27-29
Space station **5**:22-24
Spin welding **4**:74
Stainless steel **2**:42-43, **11**:41
  delta-ferrite content **12**:33-38

EVERYTHING YOU NEED TO WELD PIPE

Magnatech introduces the new Magnapulse 140, a 140A power source with an integral water cooler and controls/programming for a weld Head. All this in a compact package weighing only 62 pounds, that one man can move around a job site.

Used in conjunction with a weld Head, it becomes an extremely portable, yet rugged mechanized welding system.

For Pipe Welding: Use with REDHEAD family of Heads.

- Pipe 0.5" (13mm) to 6.625" (168mm).
- Torch rotation, filler wire feed, mechanical arc length control.
- Butt and socket welds.

For Tubesheet Welding:
Use with 450/550 Heads.

- Tubes 0.625" (16mm) to 3.5" (89mm).
- Torch rotation and wire feed.

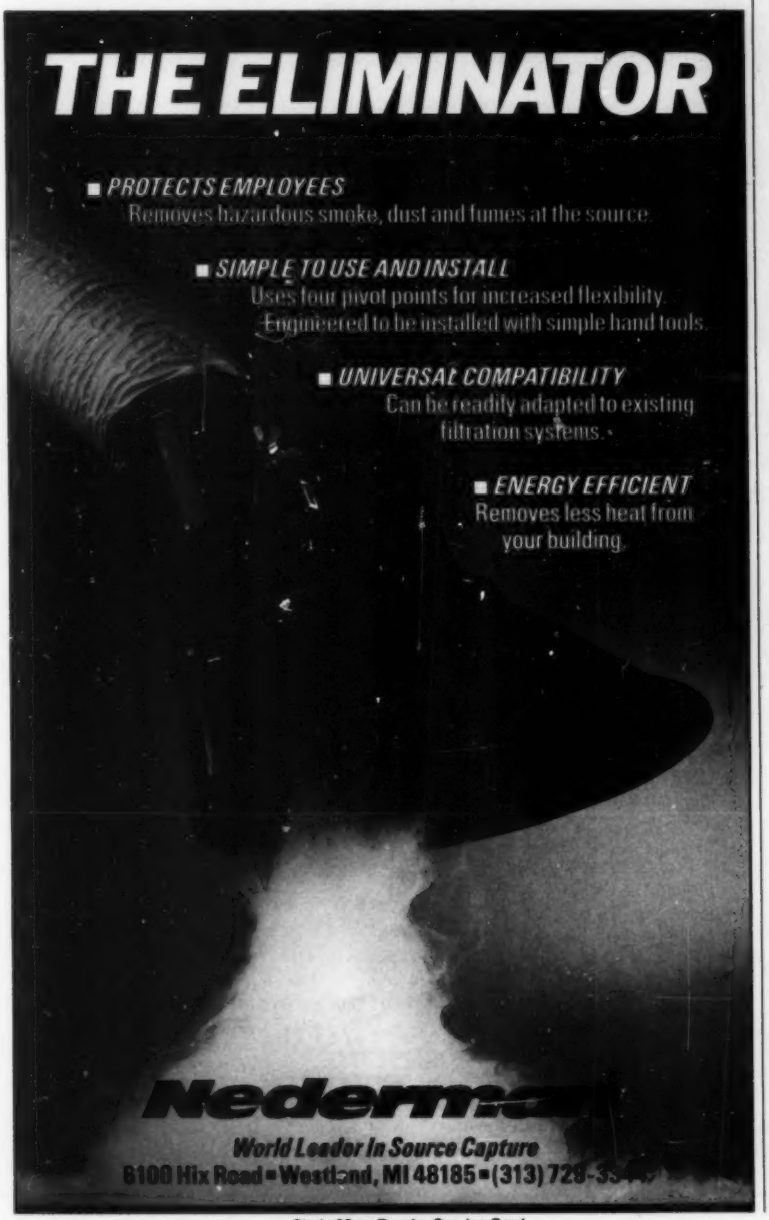
For Manual Welding: Use with standard torch.

Mechanized welding is the competitive edge that will allow you to achieve higher productivity, higher quality, with reduced labor input.

MAGNATECH
Bradley Park, East Granby, CT 06026
Tel: (203) 653-2573 Fax: (203) 652-0486

Circle 96 on Reader Service Card

duplex 8:30-33
Standards 11:23-25
EC 8:48-52
Steam-generating equipment 4:53-55, 7:37-40
Steel, size-weight (D.S.) 3:50
Steel filler materials 11:38
Stress-relaxation cracking 2:38
Structural fabricator 7:27-29
Structural steel 7:30
fabrication, welding of 12:30-31
Structural welding 7:23-25
Structural welding code 11:30-33
Structurals, cutting of 3:30-31
Submerged-arc welding 4:53-55, 6:25-65
bridges 4:41
costs 6:64
cracks in 3:42-43
fluxes
active 6:33
agglomerated 6:32
alloy 6:33
automated
manual 6:58
multiple-electrode 6:58
basicity 6:34
bonded 6:32
neutral 6:33
neutrality 6:34
flux-handling equipment 6:29
history 6:27
joint design 6:46-47
backing materials 6:47
edge preparation 6:47
power sources 6:28
process 6:27
schedules and procedures 6:50-56
structural steel 12:30-31
structurals
surfacing 6:59
wire feeders, guns 6:28
wires
cored saw 6:40
flux-wire combination 6:44
hardsurfacing materials 6:43
low-alloy-steel 6:36
stainless-steel 6:41
strip electrodes 6:41
Tandem GMAW 8:45-47
Testing for international market 8:52
Testing of submerged-arc welds 6:61
Thermal cutting 3:25-33, 12:30-31
controls for 4:58-62
Thermal-spray coating 5:30-32, 37
Thermal-spray masks 11:71-72
Thermoplastics 4:72-75
Titanium alloys, joining of 11:53-54
Total quality management 8:36-39
Toughness 11:27
of low-alloy steels 4:64-65
Tractors 8:51
Transducers, ultrasonic 10:40-42
Tube sleeving 7:37-40
Tubing, box 7:32-35
Ultrasonic testing (UT) 10:34-38
Ultrasonic transducers 10:40-42
Ultrasonic welding 4:75
Ventilation 8:24-26
Vibration welding 4:74
Visual inspection (VT) 10:34-38
Waterjet cutting 12:43-45
Weld defects (D.S.) 8:54
Weld summary sheet 12:46-47
Weldability of cast iron 3:38-40
Welder qualification 11:23-25
Welding codes, AWS, ASME 11:30-33
Welding equipment 11:54
Welding engineering 11:50-51
Welding inspectors 11:24-25
Welding personnel 11:50-51
Welding in space 5:22-24
Weldment drawings 11:64-65, 12:46-47
Wire cast 2:43
Wire feeders 9:47-49
Wire helix 2:43
Worker well-being 11:57-59
X-ray 10:34-38


THE ELIMINATOR
■ PROTECTS EMPLOYEES
Removes hazardous smoke, dust and fumes at the source.
■ SIMPLE TO USE AND INSTALL
Uses four pivot points for increased flexibility.
Engineered to be installed with simple hand tools.
■ UNIVERSAL COMPATIBILITY
Can be readily adapted to existing filtration systems.
■ ENERGY EFFICIENT
Removes less heat from your building.
Nederman
World Leader In Source Capture
6100 Hix Road ▪ Westland, MI 48185 ▪ (313) 729-3
Circle 98 on Reader Service Card